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Titolo	Metal-organic frameworks (MOFs) as catalysts // edited by Shikha Gulati
Pubbl/distr/stampa	Singapore : , : Springer, , [2022] ©2022
ISBN	981-16-7959-2 981-16-7958-4
Descrizione fisica	1 online resource (785 pages) : illustrations (chiefly color)
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Chapter 1. MOFs as catalysts: introduction and prospects --Chapter 2. Stability of MOFs and kinetics of MOF-catalyzed reactions --Chapter 3. Strategies for the synthesis and functionalization of MOFs --Chapter 4. Characterization techniques of MOFs --Chapter 5. Reactions catalyzed by MOFs and prospects for applications --Chapter 6. MOFs as catalysts for CO <sub>2</sub> capture and fixation --Chapter 7. Covalent organic frameworks as catalysts --Chapter 8. MOFs as heterogeneous catalysts --Chapter 9. MOFs as sensors --Chapter 9. MOFs as catalysts for the capture and degradation of chemical warfare agents --Chapter 10. Chiral MOFs for Asymmetric catalysis --Chapter 11. MOFs as Catalysts for the storage of methane --Chapter 12. Photocatalysis by MOFs.
Sommario/riassunto	This book highlights the state-of-the-art research and discovery in the use of MOFs in catalysis, highlighting the scope to which these novel materials have been incorporated by the community. It provides an exceptional insight into the strategies for the synthesis and functionalization of MOFs, their use as CO <sub>2</sub> and chemical warfare agents capture, their role in bio-catalysis and applications in photocatalysis, asymmetric catalysis, nano-catalysis, etc. This book will also emphasize the challenges with previous signs of progress and way for further research, details relating to the current pioneering

technology, and future perspectives with a multidisciplinary approach. Furthermore, it presents up-to-date information on the economics, toxicity, and regulations related to these novel materials.

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